Installation guide
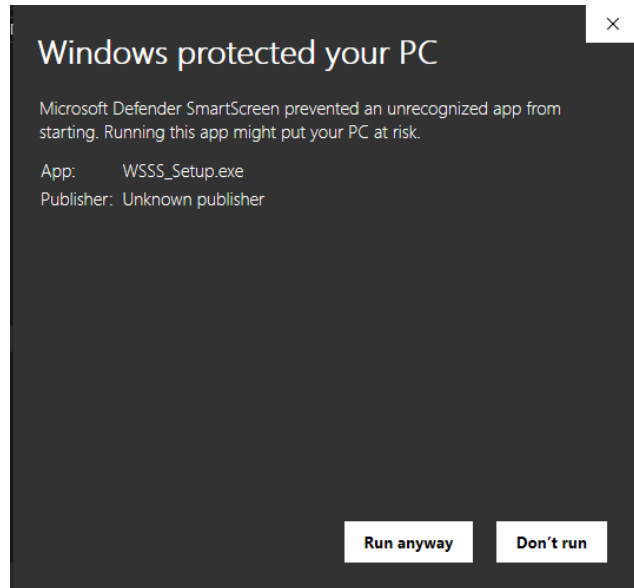
1. Download the installer from github:
   https://github.com/Team-Controller-NAU/Controller/blob/main/project-docs/WSSS_Setup.exe
   a. This installer is not signed as of writing, so this windows defender warning will occur. Press "More info" -> "Run anyway" to continue with the installation.
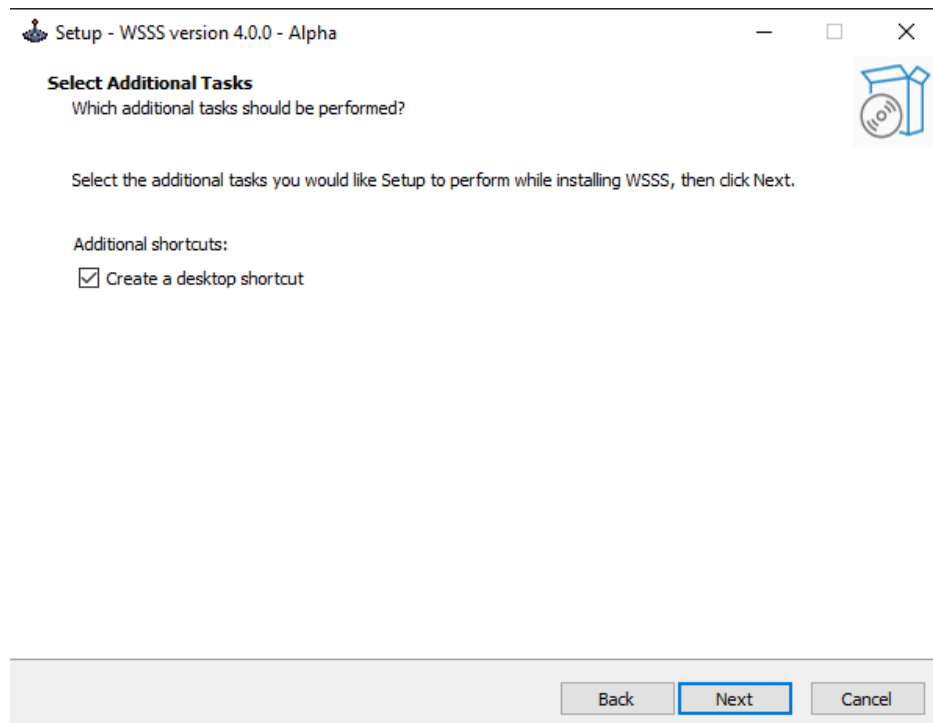

2. Once installed, open the installer. The installer will open to the screen below. This is to accept the end user agreement the QT Framework uses.
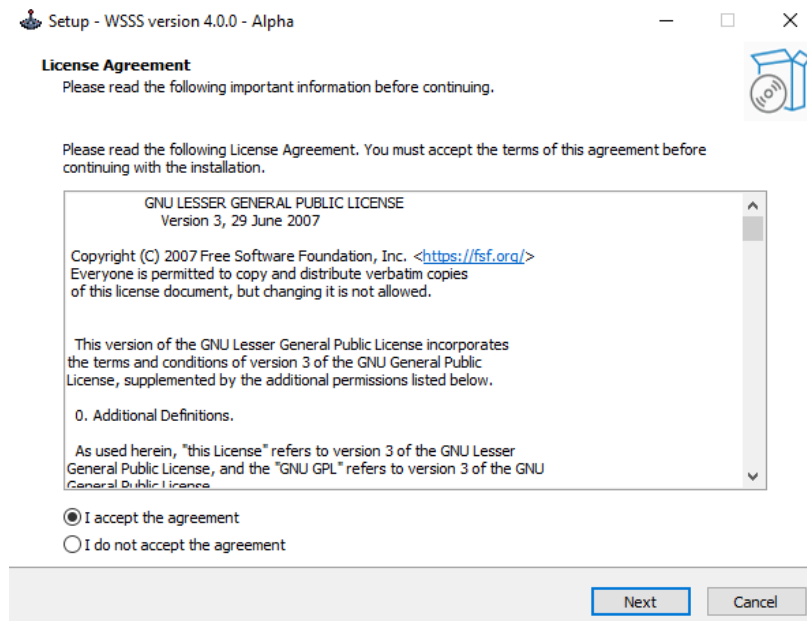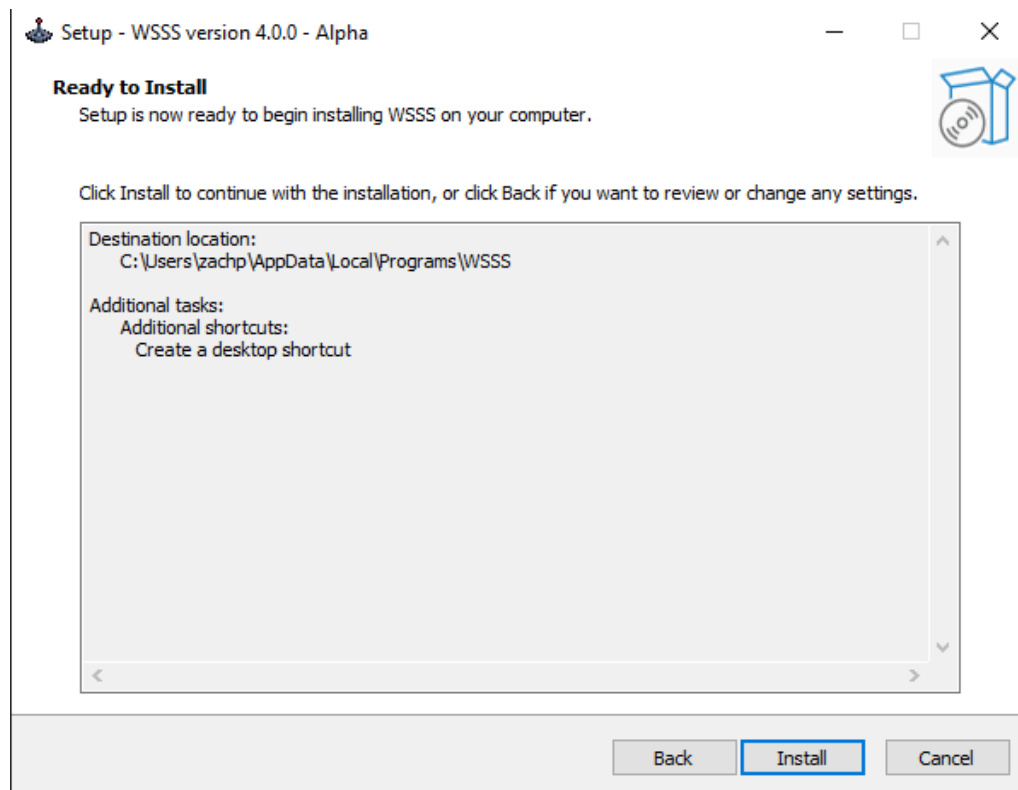
3. Once accepted, the installer will then show this screen. You can select where the application is installed.
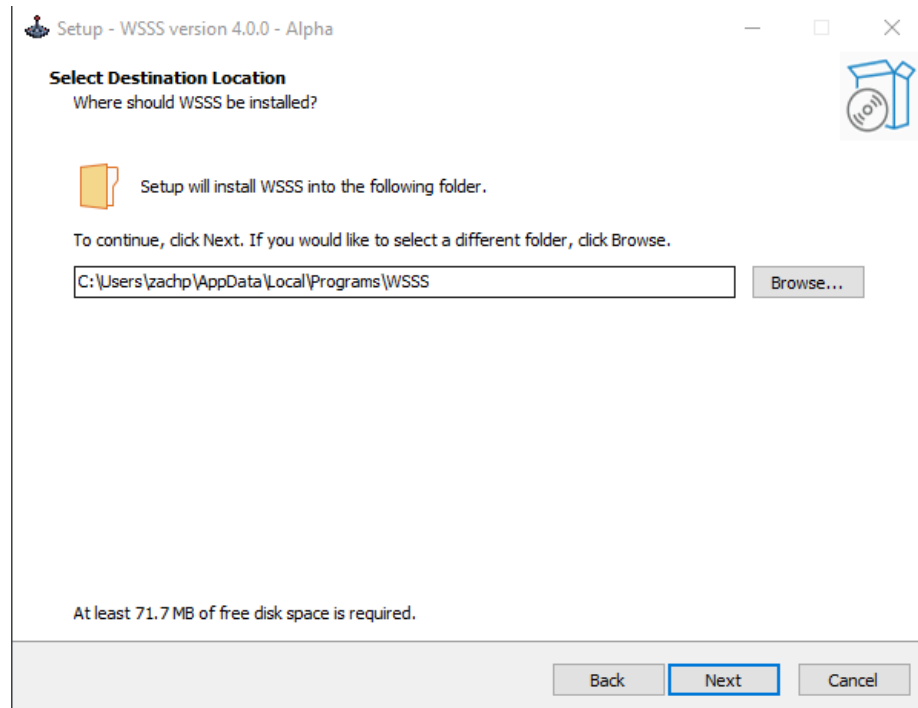
4. This screen shows the option to create a desktop shortcut.

5. This final screen displays the installation confirmation. After clicking the install button, the application will download and install on to the user's computer.


[OPTIONAL] Installing Virtualized Serial Ports

For testing serial communication, we often used virtualized serial ports to facilitate communication between our controller simulator and our application without the need for serial hardware. To do this you must install 2 serial drivers and a serial bus to connect them. We used an application called com0com (the installer is automatically downloaded when visiting the link).

Once you launch the installer, we recommend you uncheck the box labeled **CNCA0<->CNCB0** It is meant to automatically set up the ports but we have experienced issues using this feature.
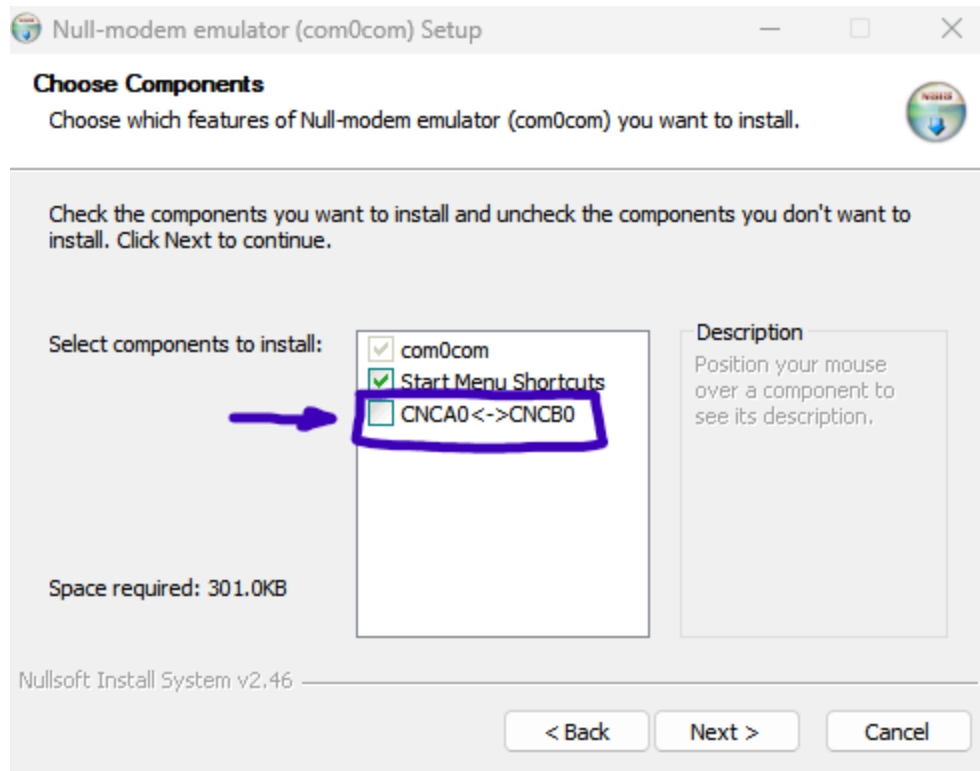
Continue with the setup until you get to the "**Finish** page. Here you will check "**Launch Setup Command Prompt**" then finish. In the command prompt you can type "help" to get a list of commands to set up and customize your ports.
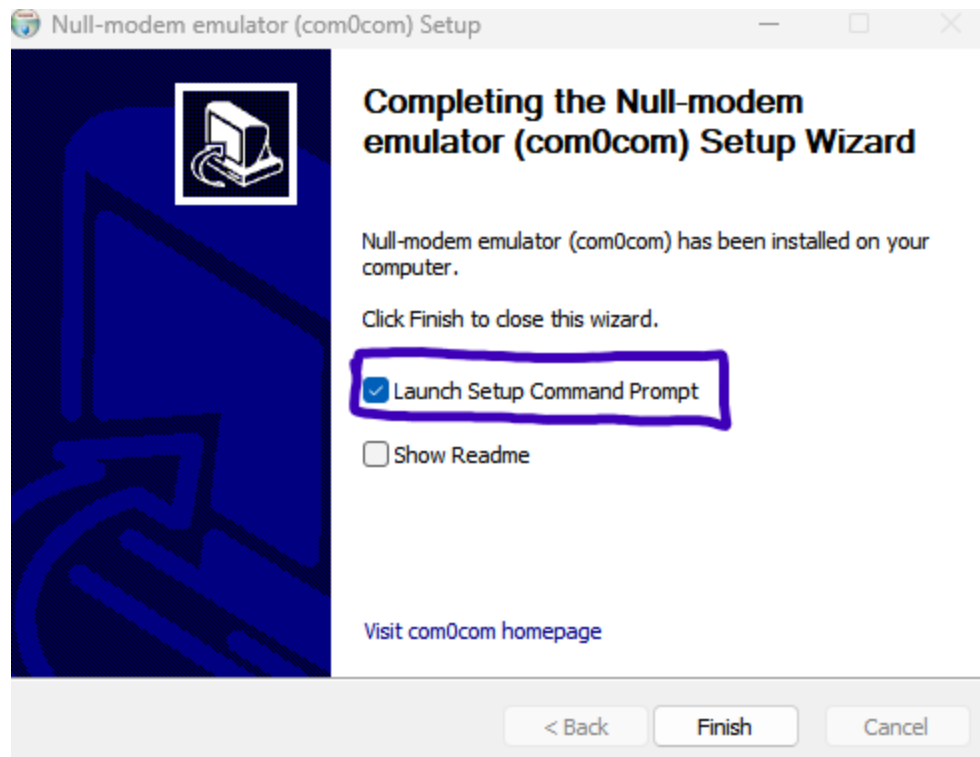
For example in the command prompt you can enter the following commands (with your desired port names) to create the virtualized ports and check if the process was successful.

install PortName=COM9 PortName=COM10

And then to list the current ports to confirm success, type:

list

After this process, your virtualized ports will be accessible by our application and you can close the command prompt. If you experience issues, you can visit online forums and/or the ReadMe documentation for troubleshooting help.

To use these ports it is important to understand the following about our architecture. The developer page is designed to launch a thread then access the serial port selected in CSim. Once you click start CSim, it will open its serial port and begin listening for a handshake message, meanwhile generating data that will be dumped once a connection occurs. To create the connection, you must go to the connection page and select the counterpart of CSim's virtual serial port then click connect. Once the handshake occurs data will be continuously read from CSim to the application through the virtual serial ports you created until you disconnect from the connection page or stop CSim from the developer page.

Research

Administrator Rights

When creating the installer through the Inno Setup (https://jrsoftware.org/isinfo.php), a setting can be enabled and disabled to prevent the use of admin rights. This can be seen in the script Inno Setup generated to create the installer. Also included below is documentation describing the *PrivilegesRequired* line.

```
; Remove the following line to run in administrative install mode (install for all users.)
PrivilegesRequired=lowest
```

https://jrsoftware.org/ishelp/index.php?topic=setup_privilegesrequired

Microsoft SmartScreen

Microsoft SmartScreen warns users when they attempt to install/run a foreign application that does not have a verified publisher attached to it. We have researched some methods for overcoming this problem:

   a. Submit for code review directly to Microsoft for each latest release (can take up to a week or longer each time)
   b. Purchase or use an existing Extended Validation (EV) code signing certificate by an approved Microsoft third party ($250-700)
   c. Purchase or use an existing Organization Validation (OV) code signing certificate by an approved Microsoft third party ($100-500)